

CLAIMS

1. An image sensor comprising a number of light sensor circuits, each of which represents a unit pixel and is capable of producing in a photoelectric converting element a sensor current proportional to the quantity of light falling thereon and converting the current into a voltage signal by a MOS type transistor with a logarithmic output characteristic in a weak inverse state, and a means for removing a charge accumulated in a parasitic capacity of the photoelectric converting element by changing a drain voltage of the transistor to a value lower than a normal value to initialize each pixel before detecting a light signal.

2. An image sensor comprising a number of light sensor circuits arranged to form a matrix of pixels, each of said circuits being capable of producing in a photoelectric converting element a sensor current proportional to the quantity of light falling thereon and converting the produced current into a voltage signal by using a MOS type transistor with a logarithmic output characteristic in a weak inverse state, and a voltage switching-over circuit for changing a drain voltage of the MOS type transistors for all pixels to a value lower than a normal for a specified time to remove a charge accumulated in a parasitic capacity of the photoelectric element before detecting a light signal from each pixel.

3. An image sensor comprising a number of light sensor circuits arranged to form a matrix of pixels, each of said circuits being capable of producing in a photoelectric converting element a sensor current proportional to the quantity of light falling thereon and converting the current into a voltage signal by a MOS type transistor with a logarithmic characteristic in a weak inverse state, a pixel-line selecting circuit for successively selecting pixel lines, a pixel selecting circuit for successively selecting pixels in one selected line, both of said selecting circuits cooperating together to successively scan and read sensor signals from respective pixels in a time

series, and a voltage switching-over circuit for changing a drain voltage of the MOS type transistors for respective pixels in a selectable pixel line to a value lower than a normal value for a specified time to remove a charge accumulated in a parasitic capacity of the photoelectric element before selecting each of the pixel lines.

4. An image sensor as defined in any one of claims 1 to 3, characterized in that each of the light sensor circuit is composed of a first transistor for converting a sensor current flowing in the photoelectric converting element to a voltage signal by using its logarithmic output characteristic in a weak inverse state, a second transistor for amplifying the voltage signal and a third transistor for outputting a sensor signal corresponding to the amplified voltage signal at a specified moment of time.

5. An image sensor as defined in claim 3, characterized in that a sample-and-hold circuit is provided on an output side of each pixel in each pixel line.